



Community Resources for Science

practical support for great science teaching

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Newsletter, Fall 2009

CRS: Working Today to Inspire the Scientists of Tomorrow

“Getting by with a little help from my friends” was a notion popularized a while back by the Beatles, but it still rings true at CRS at this time of year as we turn our thoughts, and thanks, to the friends who help us get by.

Like all non-profits, Community Resources for Science must continually demonstrate that the work we do has value and that we have a solid network of community backing. We are privileged to enjoy strong support from philanthropic foundations and corporations. Despite economic challenges, we have robust goals to serve even more teachers, in even more classrooms, with more volunteers this year!

To keep this good work going, we turn to you – our volunteers, our teacher members, our community partners, and friends. As noted in major publications such as the *Wall Street Journal* and the *New York Times*, the collective power of small (and not so small) donations from individuals is becoming a powerful survival tool for do-good organizations such as CRS.

We invite you to show your support for our efforts to bring more science into classrooms by making a tax-deductible donation -- and by telling others about

the good work of CRS. Our modest goal is to reach \$6,000 in individual donor support!

And, multiply your impact by emailing the links below to friends, family, and

colleagues to let them know about this spunky organization working to bring more science into classrooms to amaze, delight, and inspire the scientists of tomorrow.

Three easy ways to help! Choose the one that suits you!

www.firstgiving.com/CRScience to donate through our end-of-year campaign

www.crscience.org to donate on our website – just click “Donate Now”

Or, use tried and true snail mail and send a check to CRS at
1611 San Pablo Ave., Suite 10B, Berkeley, CA 94702

CIC Spotlight: Andy Tsai, Metals Wizard

Passing a classroom where Andy Tsai and his lab mates are presenting “Properties of Metals,” you could be forgiven for not realizing that the students inside were receiving standards-based science instruction. Whether it’s pulling iron filings out of Total cereal, turning pennies silver and gold, or creating multi-colored flames, the hands-on activities – and the wide-eyed 5th graders exploring them – can make the scene appear more like a carnival than a traditional scientist’s classroom visit.

Yet Tsai and his co-presenters are just that – scientists teaching science. All are graduate students in the lab of UC-Berkeley Chemistry professor (and CRS board member) Bob Bergman, where Tsai researches – you guessed it – metals, specifically the application of transition metals to new organic

reactions. Though that topic might seem a bit lofty for elementary students, in fact the groundwork for Andy’s research stretches back to fifth grade, when students learn about the common properties of metals and differences between pure metals and alloys.

As volunteers with CRS’ Community in the Classroom program, the Bergman
(Story continues on page 3)



Who knew exploring the properties of metals could be so fun — or rewarding!

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Fall Science Social: Redwoods Were the Life of the Party

Getting kids out of the classroom and into nature for firsthand discovery begins with getting **teachers** out of the classroom and into nature for a little inspiration. So, in partnership with Chabot Space & Science Center and the Save the Redwoods League, we built a hike right into our Fall Science Social!

The October event focused on environmental education -- specifically, Redwoods. After some fortifying snacks and browsing through free science material to take back to their classrooms, attendees took a hike into the 13 acres of *Sequoia*

sempervirens that surround the Chabot Center in the Oakland hills. Eric Havel, Environmental Education Manager at the Center, led 20 teachers out to shake redwood cones in search of the elusive seeds and to key out the identity of the sword fern, a redwood ally.

Attendees also learned about Redwoods-related resources for teaching. These include **Chabot's field trips for 3rd-5th graders** on the topic of the Redwoods Biosphere, **Chabot's in-class presentations**, and



Teachers examine the sword fern.

the **Nature Van** program from **Wildcare-bayarea.org**. Redwood Regional Park and Muir Woods are great parks to visit.

Redwoods-themed lessons meet state science standards for grades K-5, as shown in the table at left.

Many thanks to our co-hosts, Save the Redwoods League (www.savetheredwoods.org) and Stan Fukunaga at Chabot Space & Science Center (www.chabotspace.org).

G	California Standard Area	Example of a Redwood Topic
K	Plant parts and unique features	How redwood trees are unique; size, seeds
1	Plant environments	Where redwoods grow, what they require
2	Life cycles	Redwood life cycles and germination; Life in the red-
3	Adaptation; Impact of environmental change.	Redwoods are an ancient life form, create changes to their environments, adapt
4	Ecosystems;producers/decomposers	Redwood forest web of life, including decomposers
5	Carbon dioxide; Weather science	Redwood tree biology. Why redwoods grow in the hills

Be CuRious: Free (or nearly free) Stuff!

FREE is the key! Here are some great resources for free lesson plans and free or inexpensive science materials.

Bricks and mortar:

RAFT warehouse (Resource Area for Teachers) has two locations, so grab a colleague and head over to either their San Jose (1355 Ridder Park Drive) or Redwood City (101 Twin Dolphin Drive) locations. You'll find lots of inexpensive new and recycled materials for your classroom, ranging from stickers to test tubes to office chairs. RAFT also provides lesson plans and professional development workshops. www.raft.net

East Bay Depot for Creative Reuse (4695 Telegraph Avenue in Oakland) is an ecological treasure trove of art & craft materials, educational supplies, paper goods, fabric, and much more. Founded in 1979 by two Oakland public school teachers,

the Depot promotes solid waste diversion and resource conservation through the Depot store and environmental education programs. www.east-bay-depot.org

Virtual warehouses:

Tucked away in the National Science Teachers Association (NSTA) website, under the Publications tab, you'll find the Freebies for Science Teachers, a continually refreshed repository of free resources for you and your classroom. The handy online version is well worth bookmarking <http://www.nsta.org/publications/freebies.aspx?lid=exp>

NASA allows you to search their vast database of teacher resources at <http://search.nasa.gov/search/edFilterSearch.jsp?empty=true>

The US Geological Survey has free posters and coloring books along with teacher

guides and websites about all kinds of earth science related topics. <http://education.usgs.gov/>

Free Science Lesson plans:

Check out the CRS lesson plan database at our website, www.crs-science.org Click on the scientist's tab and then click on CIC Lesson Archive to browse the grade specific lessons available.

Also, explore free lesson plans developed with science volunteers and SFUSD teachers available online through the UCSF Science and Health Education Partnership at www.seplessons.org.

Free Online videos:

To find great educational videos, check out this free online library of educational videos for students ages 3 to 18. The site, www.watchknow.org, features links to more than 11,000 videos in science, history, math, and other subjects.

Andy Tsai and the Properties of Metals

Continued from pg. 1

team visits elementary school classrooms to teach interactive, standards-based lessons, and in the process, to show students a variety of real-life scientists.

"[Once], a student asked, 'are you popular?'," recounts Tsai. "Though at the time, I thought the question was funny because they seemed to be so disconnected, now I think they were asking because the popular opinion among their peers is that it is uncool to be interested in science. I hope we've challenged that notion."

Tsai's life-long interest in science stems from the very same types of experiences that he now brings to the children. "I've always been interested in science. In elementary school...I remember when we studied simple machines, we made a Ferris wheel with K'nex."

Now, as he begins his fourth year volunteering with the CIC program, Andy has teamed with the UC-Berkeley Mass

Spectrometry Facility to develop a brand-new fifth grade lesson about the molecular basis of scent. Entitled "What's that Smell?," the presentation allows students to connect remotely to the world-class equipment at the Mass Spectrometry Facility to analyze scented mixtures in real time and determine their chemical components.

"Even after visiting over 20 classrooms, each new visit is different and fun," says Tsai. "It's even better when you teach kids because they get so excited and you can show them so many neat things."

It's safe to say that Andy and his fellow volunteers aren't the only ones enjoying themselves. Kristine Fowler, a teacher at John Muir Elementary in Berkeley, raves about the CIC program, "having scientists come to my classroom is so inspiring to my kids. I also love being in the role of observer (and reinforcer)...My only request for improvement is more of these programs, please."

Thanks to our Generous Donors—2009 so far

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From the Editor

I'm pleased to introduce myself as the new Executive Director of Community Resources for Science. I'm a big believer in leveraging the skills and enthusiasm of trained volunteers and supporting classroom teachers as critical ways of inspiring and motivating students – CRS is a perfect fit!

CRS is poised for an exciting future. Even in these challenging economic times we have continued to enjoy strong support from our foundation, corporate and individual donors (our gratitude is mighty).

Over the course of 12 years, under the guidance of founders and co-directors Anne Jennings and Nicki Norman, CRS has served thousands of classroom students and hundreds of East Bay teachers.

Interim director, and grantwriter extraordinaire, Lisa Wahl, guided CRS through the summer transition, and continues to work on several projects.

And, we're just getting started! I look forward to guiding CRS to the future.

-Teresa Barnett

Susan Helmrich & Richard Levine
Chris & Carol Jenson
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Help Wanted: CRS Interns

Great opportunity! We provide our interns with the chance to shine. Take responsibility for specific projects (program support, web development, survey administration, events) – we put you in charge and give you the tools to succeed. Looking for responsible volunteers, able to commit 4-10 hours per week, flexible schedule; 3 month term or semester, We're happy to complete paperwork for course credit if needed. Contact us: teresa@CRScience.org



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www.crscience.org

Expanding Professional Support for Teachers at all Stages

CRS continues expanding professional development support for teachers at every stage in their careers. CRS has developed a series of courses and workshops designed to meet the varying needs of these dedicated individuals.

Science, math and engineering students who want to explore teaching can participate in an introductory course in the Cal Teach program at the University of California at Berkeley. CRS contributes to two different elementary science teaching courses. The courses use activity demonstrations, skill modeling, lesson design and teaching experiences to explore the K-5 California State Science Standards, while highlighting important teaching techniques. During weekly elementary classroom placements, these talented and community-minded Cal students act as role models, observe the mentor teacher, assist, and then teach two of their own lessons.

This support ensures quality lessons from Cal Teach students, setting them up for positive first teaching experiences. A mentor teacher from Oakland enthusiastically reported this year that "all of my Cal students have been great!"

For the third time this spring, we'll offer the course for credential candidates in the multi-subject credential program at California State University, East Bay. This fall, a new version of the course was offered at the Alameda County Office of Education for Alameda County teachers.

These courses help credential candidates who have experience with basic elementary pedagogy become more comfort-

able with grade-level science content, science and inquiry teaching techniques, and the available resources in our community for science teaching, skill development, and enrichment.

The CRS professional development team, consisting of Nicki Norman, Susan Bellone, and Sherry Johnson, continues to develop and deliver specific workshops addressing teacher-identified needs. Our on-going work tracking the PD opportunities in the community allows us to both match teachers with other PD organizations and adjust our own offerings as required. This differentiated and connected approach to professional development helps educators get involved and stay involved in the process of building their own skills.

For more information or examples of our professional development offerings, see our website at www.crscience.org. If you're interested in becoming a mentor teacher for Cal Teach, eligible for a Cal student placement, please contact Winnie Froelich at calteach@berkeley.edu or 510-642-4024.

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